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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/002,141      | 12/05/2001  | Alexander Beeck      | 033275-316          | 3862             |

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| EXAMINER |
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WIEHE, NATHANIEL EDWARD

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| ART UNIT | PAPER NUMBER |
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3745

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04/20/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                     |  |
|------------------------------|--------------------------------------|-------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/002,141 | <b>Applicant(s)</b><br>BEECK ET AL. |  |
|                              | <b>Examiner</b><br>NATHANIEL WIEHE   | <b>Art Unit</b><br>3745             |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 3, 16 and 22-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3, 16 and 22-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Withdraw of Finality***

Upon further consideration the finality of the previous office action was in err. See MPEP 706.07(b) Therefore, the Office Action dated 7 April 2009 is hereby vacated and replaced with this action. Any inconvenience to applicant or applicant's representative is deeply regretted.

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 18 December 2008 has been entered.

### ***Response to Arguments***

Applicant's arguments filed 18 December 2008 have been fully considered but they are not persuasive.

Firstly, Applicant notes that the amendment does not "alter the scope of the existing claims" and was provided "for purposes of clarification". Since the scope of the claims has not been altered the rejection stands as previously iterated. It is noted that the Examiner, in addressing the amendment after final, believed that the claims would require a separate second passage and dust discharge aperture. However, upon

accessing the amendment on the merits it is apparent to the examiner that the amendment does not constitute any variation in the scope of the claims.

Second, Applicant asserts that the reference of Yamarik does not anticipated the claims for four reasons: (1) that the dust discharge aperture of Yamarik is not inherently sized for the introduction of a borescope, (2) the tip passage of Yamarik is not tangential to the curved flow path, (3) the flow of fluid through the second section of Yamarik would not be "relatively free of particles" and (4) Yamarik does not provide the claimed "straight line of sight". The examiner respectfully disagrees and addresses each issue in the following paragraphs;

(1) The examiner agrees with applicant that the correct standard for inherency is that the reference must *necessarily* be and not *could* be. [emphasis added]. However, the examiner does not agree with the analysis proffered by applicant. The discharge hole (58), which is located at the end of the tip passage (56) and adjacent the trailing edge (24), is not the same as the other cooling flow discharge holes (56,52). Importantly said hole is significantly larger than these other cooling holes. Also, said hole is in direct alignment with the tip channel, as opposed to the trailing edge passages with serpentine through the pedestals (70,72). As such, said hole is *necessarily* the only hole of Yamarik's blade which is suitable for introduction of a borescope. Further, applicant notes that DE '804 utilizes holes (22,24,26,35) that are larger so as to allow for the introduction of the borescope. However, the applicant incorrectly correlates Yamarik's discharge hole with the smaller holes not capable of introducing a borescope. The examiner contends, as discussed above, that the discharge aperture of Yamarik

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more closely relates to the holes of DE '804 that are capable of introduction of a borescope than the smaller and more prevalent cooling discharge holes shown by both Yamarik and DE '804.

(2) Applicant's modified drawing is flawed in that it appears to neglect the clear indication of two flows immersing for the turning section. It is first noted that applicant, in the specification and drawings, defines the turning section as the entire area spanning between the exit of the first section and the entrance to the second section. While the supplied modified drawing of Yamarik appears to inappropriately limit the area of the turning section to the space under Yamarik's turning vane (54). Yamarik clearly shows a flow that is tangential to the curved flow path and leading to the tip channel (56).

(3) Applicant asserts that the flow through the second section would not be free of particles since the turning vane of Yamarik creates a primary flow path directed into the second section and not the second passage. However, the examiner deems such a characteristic inherent to the structure of Yamarik. Specifically, the dominating force acting on particles in the cooling path is not the flow direction, but the enormous centrifugal force due to the high rotational speeds of the blades. As such, the particle would not be entrained in the primary flow path, but rather directed to the very tip of the blade and incorporated into the previously noted tangential flow path and ultimately directed out of the discharge aperture.

(4) Applicant asserts that the turning vane (54) would break the straight line of sight in Yamarik. However, the examiner contends that the turning vane does not

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extend upwardly so as to contact the tip of the blade and thereby provides a straight line of sight along the tip such that one could see some portion of the back side of the leading edge wall, i.e. first portion of the third wall.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 3,16 and 22-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamarik et al. (4,278,400), hereinafter “Yamarik”. Yamarik discloses a rotating blade (of a turbine having a coolant passage with a curved flow section (36,38) in a first flow direction and a second passage (56) parallel to the axis of the turbine and branching off the coolant passage at tangentially to the curved flow section. The second passage is arranged in the neighborhood of the blade tip and extends to the trailing edge of the blade. Further, the second passage is capable of both acting as a dust discharge aperture, due to its tangential relationship with the curved passage and its radially outward location, as well as allowing for the introduction of a borescope therethrough. The second passage (58) acts as a dust removal passage due to the inertial effects of the rotation of the blades on the relatively high mass dust particles separating these particles in the curved flow section while the main coolant flow turns radially inward to the second section. Further, Yamarik’s blade includes a first section (36) which flow toward the curved flow section, a second passage (58) flowing tangentially away from

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the curved section, and a second section (26) flowing away from the curved section. A first wall (34) defined the first and second sections. A second wall includes a first portion (22) defining the first section and a second portion (16) defining the second passage (56). A third wall includes a first portion (28) defining the second section and parallel to the first wall (34) and a second portion defining the second passage. Additionally, there would be a straight line of sight through the second passage to the second section (16) of the second wall.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NATHANIEL WIEHE whose telephone number is (571)272-8648. The examiner can normally be reached on Mon.-Thur. and alternate Fri., 7am-4:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571)272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/NATHAN WIEHE/  
Nathan Wiehe  
Examiner  
Art Unit 3745

/Edward K. Look/  
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